

REMARKS/ARGUMENTS

Claims 1 - 20 are pending in this application. Claims 1 - 20 are rejected. Claims 1, 2, 8 and 15 have been amended. No new matter has been added. In view of the amendments and the following remarks, reconsideration and allowance of all pending claims are respectfully requested.

**Rejection of Claims under 35 U.S.C. § 103**

Claims 1 - 4, 6-11, 13-18, 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tuthill, U.S. 5982221, (hereinafter Tuthill) in view of Kunst. Claims 5, 12, 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Machida, U.S. 6046492 (hereinafter Machida) and Tuthill, as applied to claims 1-4, 6-11, 13-18, 20 above and further in view Prior Art by Sandhu et al., U.S. 6140860, (hereinafter Prior Art). The Applicants respectfully disagree but have amended the claims to clarify the claimed invention.

As amended, Claim 1 recites in part “a temperature measurement circuit that is formed on a second substrate and that is configured to perform a voltage measurement by measuring two voltages that result after applying two different currents to a single junction diode through a single terminal; wherein the single junction diode is one of the first junction diode or the second junction diode, and the single terminal is one of the first terminal or the second terminal.” In contrast to applying two different currents to a single diode, Tuthill teaches applying currents to two transistors.

The Office Action states that “Tuthill discloses in Fig.3 a device comprising a temperature sensor having two transistors/junction diodes/ diode connected transistors (collocated on the same substrate/ support) whose first electrodes are connected respectively to a

first terminal (connected to the positive input of the amplifier/ measuring circuit 78) and a second terminal (connected to the negative input of the amplifier/ measuring circuit 78), a second electrode (base) is connected to a third terminal ( $V_{\text{ground}}$ /  $V_{\text{bias}}$ ), wherein only one of the first and second terminals is connected to a measuring circuit 78 by means of switches S1 and S2 at a time. It is inherent, that the third terminal is also used in temperature measurements.”

Stated another way, the Office Action argues that, with Reference to Figure 3 of Tuthill, Tuthill teaches taking a measurement by coupling both Q1 and Q2 to the amplifier 78. The Office Action goes on to state that only one transistor is coupled to the amplifier at a given time. This system, however, uses both Q1 and Q2 to take a measurement.

Tuthill does not teach coupling two different current sources to a single transistor. For example, Tuthill does not teach coupling both current source 32a and 34a to a single transistor. Tuthill does not teach a MUX that selectively couples both current sources two a single transistor. In contrast, Tuthill teaches switches that selectively couple *a single current source to a single transistor* at a given time. Thus, although the system of Tuthill may teach only using one terminal at a given time, to complete the voltage measurement, *Tuthill's systems uses two transistors*. Tuthill does not teach taking a measurement without use of two junction diode.

Since Tuthill does not teach a temperature measurement circuit that is formed on a second substrate and that is configured to perform a voltage measurement by measuring two voltages that result after applying two different currents to a single junction diode through a single terminal; wherein the single junction diode is one of the first junction diode or the second junction diode, and the single terminal is one of the first terminal or the second terminal, Claim 1

is proposed to be allowable. Claims 3-7 are proposed to be allowable as they depend from an allowable base claim.

As amended, Claim 2 recites in part “a temperature measurement circuit that is formed on a second substrate and that is configured to perform a first voltage measurement at a single terminal after applying a first current to a single junction diode through the single terminal and to perform a second voltage measurement at the single terminal after applying a second current to the single junction diode through the single terminal; wherein the single junction diode is one of the first junction diode or the second junction diode, and the single terminal is one of the first terminal or the second terminal.” For at least the reasons presented above, Claim 2 is proposed to be allowable.

As amended, Claim 8 recites in part “performing a voltage measurement by measuring two voltages at a single terminal after applying two different currents to the single terminal such that the two different currents are applied to a single junction diode; wherein the single junction diode is one of the first junction diode or the second junction diode, and the single terminal is one of the first terminal or the second terminal, wherein the voltage measurement is performed using the temperature measurement circuit.” For at least the reasons presented above, Claim 8 is proposed to be allowable. Claims 9-14 are proposed to be allowable as they depend from an allowable base claim.

As amended, Claim 15 recites in part “means for performing a voltage measurement at a single terminal after applying two different currents to the single terminal such that the two different currents are applied to a single junction diode means; wherein the single junction diode means is one of the first junction diode means or the second junction diode means and the single

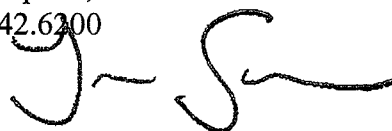
terminal is one of the first terminal or the second terminal, wherein the voltage measurement is performed using the signal measuring means.” For at least the reasons presented above, Claim 15 is proposed to be allowable. Claims 16-20 are proposed to be allowable as they depend from an allowable base claim.

Conclusion

In view of the foregoing amendments and remarks, all pending claims are believed to be allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the undersigned attorney for the applicants at the telephone number provided below.

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